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L17: Entry 3 of 10

File: USPT

Nov 27, 2001

DOCUMENT-IDENTIFIER: US 6324542 B1

TITLE: Enterprise connectivity to handheld devices

Abstract Text (1):

A FormLogic (FL) client/server system and method to access existing enterprise data sources on an occasional basis. The system includes a FL builder program to generate a communications agent that encapsulates a communication session. The session includes one or more related tasks. The system also includes a FL server which is connected to one or more enterprise data sources. The FL server provides the ability to link hardware devices running a FL engine as a client to access existing enterprise data sources on an occasional basis. It is optimized to communicate by exchanging a minimum amount of data, since the wireless transports do not move large amounts of data quickly and data is expensive to move. Each session encompasses connecting the remote host, performing a specific task or set of tasks, then disconnecting from the host. Because the connection times must be short, the client and server need to be able to perform the required tasks without user intervention. The FL engine includes a user interface, a script engine, a communications module, and a local data store, and preferably runs on a mobile personal digital assistant. Upon connection, this local database is automatically manipulated by the FL server. The FL server can query the FL client database, add data to the client database, or remove data from the client database so as to make updates to both the client and server databases for reflecting changes that have happened on both sides since the last connection.

Detailed Description Text (19):

Create Robust E-mail Gateways--Using existing OLE controls from third parties, developers can easily integrate existing Messaging API-based or point-of-presence (POP)/Simple Mail Transfer Protocol (SMTP) mail systems. This provides opportunities for developers seeking to provide an application that provides access to both a host database and an enterprise e-mail system in a single connection.

Detailed Description Text (33):

The FL server 132 provides the ability to link hardware devices running the FL Engine 160 to access existing enterprise data sources on an occasional basis. It is, optimized to communicate by exchanging a minimum amount of data, since the wireless; transports are. expensive and are characterized by high latency and low bandwidth. The FormLogic Server 132 serves as a "gateway" between FormLogic Clients (e.g., 136, 142, 146) and enterprise data sources (e.g., 180, 182). the server 132 supports what is known as a multi-tier client/server model in that it creates an intermediate server between the client and the "traditional" or "original" server.

Detailed Description Text (40):

A set of tasks are provided or handled by a service. A service defines the relationship between a client application and an enterprise data source. Examples of services include Mail, World Wide Web Gateway, or Inventory. For example, a Mail service 190 is a service that provides the GetMail task 204 and SendMail task 206, and is connected to the data source 180. An Inventory service 192 provides the UpdateInventory task 208 and InterrogateInventory task 210, and is connected to an inventory data source 182, for example. Each Connection object has its own instantiation of the service class associated with it. For example, Task1 and Task2

comprise an instantiation of Service for Connection object 194. The service is written as if the server was in communication with a single client. Multiple copies of the service are needed for each single client connection coming into the FL server. Each instantiation of the service does not maintain connection to its data source; only the "master" service object maintains connection to the associated data source. The service instantiation can be considered as interfaces between the "master" service and the connection.



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**Wright, Jr. et al.**

(10) **Patent No.:** **US 6,324,542 B1**  
(45) **Date of Patent:** **\*Nov. 27, 2001**

(54) **ENTERPRISE CONNECTIVITY TO  
HANDHELD DEVICES**

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"Managing the Mail-Strom," Infoworld, pp. 142-165, Nov. 14, 1994.\*

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**James O'Grady**, Del Mar, both of CA  
(US)

Capen, Tracey, "cc:Mail Mobile for Windows is a First Class Mail Upgrade," Infoworld, pg. 98, Feb. 14, 1994.\*

(List continued on next page.)

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(US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **09/220,284**

(22) Filed: **Dec. 23, 1998**

#### Related U.S. Application Data

(63) Continuation of application No. 08/665,422, filed on Jun. 18, 1996, now Pat. No. 5,857,201.

(51) Int. Cl.<sup>7</sup> ..... **G06F 17/30**

(52) U.S. Cl. .... **707/104.1; 707/4; 707/10;  
707/203; 704/8; 709/206**

(58) Field of Search ..... **707/104.1, 201,  
707/10, 4, 203; 709/227, 206; 705/204,  
26; 345/330; 455/414, 461; 704/8**

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(57)

#### ABSTRACT

A FormLogic (FL) client/server system and method to access existing enterprise data sources on an occasional basis. The system includes a FL builder program to generate a communications agent that encapsulates a communication session. The session includes one or more related tasks. The system also includes a FL server which is connected to one or more enterprise data sources. The FL server provides the ability to link hardware devices running a FL engine as a client to access existing enterprise data sources on an occasional basis. It is optimized to communicate by exchanging a minimum amount of data, since the wireless transports do not move large amounts of data quickly and data is expensive to move. Each session encompasses connecting the remote host, performing a specific task or set of tasks, then disconnecting from the host. Because the connection times must be short, the client and server need to be able to perform the required tasks without user intervention. The FL engine includes a user interface, a script engine, a communications module, and a local data store, and preferably runs on a mobile personal digital assistant. Upon connection, this local database is automatically manipulated by the FL server. The FL server can query the FL client database, add data to the client database, or remove data from the client database so as to make updates to both the client and server databases for reflecting changes that have happened on both sides since the last connection.

40 Claims, 5 Drawing Sheets

